



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

POSITIVE RECALL

EFFECTIVE _____ AUTH _____

RELEASED _____ DATE _____

D5805-3

Job Sheet 207481



Part No: D5805-3

Job Qty: 8 pcs

Part Name: Hoop



Part Weight: 0 lbs

Job Created: 2/26/20

Due Date: 3/27/20

Type: Stock

Status: New

Job Tracking No:

Created By: Jennifer Renwick

Description:

Priority: Medium

Note: URF 20-522 DWG D5805 REV.A IPP REV:A NEW ISSUE 20.01.15 JV VERF:DD

Ship Via:

Bill of Materials

Job Routing

| Op No | Operation | Qty | Start Date | Due Date | Standard | | Workcenter/Supplier | | Sign-off |
|-------|---------------------------|-------|------------|----------|-----------|---------|--------------------------|-----------|----------|
| | | | | | Setup Hrs | Run Hrs | Workcenter / Supplier | Lead Time | |
| 100 | Large Fab - Welded Assy-1 | 8 pcs | 3/27/20 | 3/27/20 | 0.00 | 4.00 | Large Fab - 1 | | |
| | | | | | | | Large Fab - 10 | | |
| | | | | | | | Large Fab - 2 | | |
| | | | | | | | Large Fab - 3 | | |
| | | | | | | | Large Fab - 4 | | |
| | | | | | | | Large Fab - 5 | | |
| | | | | | | | Large Fab - 6 | | |
| | | | | | | | Large Fab - 7 | | |
| | | | | | | | Large Fab - 8 | | |
| | | | | | | | Large Fab - 9 | | |
| | | | | | | | Large Fab - 11 (Various) | | |
| | | | | | | | Large Fab - 12 | | |
| 110 | QC 5 | 8 pcs | 3/27/20 | 3/27/20 | 0.00 | 0.00 | QC 5 - 10 | | |
| | | | | | | | QC 5 - 12 | | |
| | | | | | | | QC 5 - 17 | | |
| | | | | | | | QC 5 - 18 | | |
| | | | | | | | QC 5 - 19 | | |
| | | | | | | | QC 5 - 22 | | |
| | | | | | | | QC 5 - 24 | | |
| | | | | | | | QC 5 - 3 | | |
| | | | | | | | QC 5 - 43 | | |
| | | | | | | | QC 5 - 49 | | |
| | | | | | | | QC 5 - 51 | | |
| | | | | | | | QC 5 - 58 | | |
| | | | | | | | QC 5 - 68 | | |
| | | | | | | | QC 5 - 9 | | |
| | | | | | | | QC 5 - 50 | | |
| | | | | | | | QC 5 - 30 | | |
| | | | | | | | QC 5 - 40 | | |
| | | | | | | | QC 5 - 61 | | |
| | | | | | | | QC 5 - 81 | | |

DAS
24
9-89

John M.

DAS
40
9-89

MAR 10 2020

Plex 3/5/20 8:30 AM Dart.Renwick.Jennifer

3/5/2020

[Dart Hawkesbury] Job Sheet - Renwick, Jennifer

| | | | | | | |
|-----|-----------------------------|-------|---------|-----------|-----------------------------|----------|
| 120 | Conventional Mill - 1 - B4B | 8 pcs | 3/27/20 | 0.25 1.00 | Conventional Mill - 1 - B4B | |
| | | | | | Conventional Mill - 2 - B4B | 20/3/10 |
| 130 | QC 2 | 8 pcs | 3/27/20 | 0.00 0.00 | QC 2 - 1 | |
| | | | | | QC 2 - 12 | |
| | | | | | QC 2 - 14 | |
| | | | | | QC 2 - 17 | |
| | | | | | QC 2 - 19 | |
| | | | | | QC 2 - 2 | |
| | | | | | QC 2 - 20 | |
| | | | | | QC 2 - 22 | |
| | | | | | QC 2 - 23 | |
| | | | | | QC 2 - 25 | |
| | | | | | QC 2 - 32 | |
| | | | | | QC 2 - 33 | |
| | | | | | QC 2 - 35 | |
| | | | | | QC 2 - 39 | |
| | | | | | QC 2 - 4 | |
| | | | | | QC 2 - 40 | |
| | | | | | QC 2 - 44 | |
| | | | | | QC 2 - 45 | |
| | | | | | QC 2 - 48 | |
| | | | | | QC 2 - 49 | |
| | | | | | QC 2 - 50 | |
| | | | | | QC 2 - 51 | |
| | | | | | QC 2 - 52 | |
| | | | | | QC 2 - 57 | |
| | | | | | QC 2 - 62 | |
| | | | | | QC 2 - 63 | 20/3/10 |
| | | | | | QC 2 - 8 | |
| | | | | | QC 2 - 66 | |
| | | | | | QC 2 - 64 | |
| | | | | | QC 2 - 65 | |
| | | | | | QC 2 - 5 | |
| | | | | | QC 2 - 71 | |
| | | | | | QC 2 - 73 | |
| | | | | | QC 2 - 69 | |
| | | | | | QC 2 - 76 | |
| 140 | QC 8 | 8 pcs | 3/27/20 | 0.00 0.00 | QC 8 - 12 | |
| | | | | | QC 8 - 14 | 20/03/10 |
| | | | | | QC 8 - 17 | |
| | | | | | QC 8 - 20 | |
| | | | | | QC 8 - 25 | |
| | | | | | QC 8 - 3 | |
| | | | | | QC 8 - 32 | |
| | | | | | QC 8 - 33 | |
| | | | | | QC 8 - 35 | |
| | | | | | QC 8 - 39 | |
| | | | | | QC 8 - 4 | |
| | | | | | QC 8 - 44 | |
| | | | | | QC 8 - 45 | |
| | | | | | QC 8 - 49 | |
| | | | | | QC 8 - 58 | |
| | | | | | QC 8 - 8 | |
| | | | | | QC 8 - 9 | |
| | | | | | QC 8 - 68 | |
| | | | | | QC 8 - 67 | |
| | | | | | QC 8 - 1 (A) | |
| | | | | | QC 8 - 47 | |
| | | | | | QC 8 - 40 | |

Plex 3/5/20 8:30 AM Dart.Renwick.Jennife

| | | | | | |
|---------------------------------------|---------|-----------|------------------------|-----------------|------|
| | | | | QC 8 - 52 | |
| | | | | QC 8 - 23 | |
| | | | | QC 8 - 57 | |
| | | | | QC 8 - 76 | |
| | | | | QC 8 - 61 | |
| 150 Packaging 3-1 - Stock - B4B 8 pcs | 3/27/20 | 0.00 0.00 | Packaging 3 - 1 - B4B | | |
| | | | Packaging 3 - 2 - B4B | | |
| | | | Packaging 3 - 3 - B4B | | |
| | | | Packaging 3 - 4 - B4B | | |
| | | | Packaging 3 - 5 - B4B | | |
| | | | Packaging 3 - 6 - B4B | | |
| | | | Packaging 3 - 7 - B4B | | |
| | | | Packaging 3 - 8 - B4B | | |
| | | | Packaging 3 - 9 - B4B | | |
| | | | Packaging 3 - 10 - B4B | | |
| | | | Packaging 3 - 11 - B4B | | |
| | | | Packaging 3 - 12 - B4B | | |
| | | | Packaging 3 - 13 - B4B | | |
| | | | Packaging 3 - 14 - B4B | | |
| | | | Packaging 3 - 15 - B4B | | |
| | | | Packaging 3 - 16 - B4B | | |
| | | | Packaging 3 - 17 - B4B | DAS | |
| | | | Packaging 3 - 18 - B4B | 24 | |
| | | | Packaging 3 - 19 - B4B | 9-89 | |
| | | | Packaging 3 - 20 - B4B | | |
| | | | Packaging 3 - 21 - B4B | | |
| | | | Packaging 3 - 22 - B4B | | |
| | | | Packaging 3 - 23 - B4B | | |
| | | | Packaging 3 - 24 - B4B | | |
| | | | Packaging 3 - 25 - B4B | | |
| | | | Packaging 3 - 26 - B4B | | |
| | | | Packaging 3 - 27 - B4B | | |
| | | | Packaging 3 - 28 - B4B | | |
| | | | Packaging 3 - 29 - B4B | | |
| | | | Packaging 3 - 30 - B4B | | |
| | | | Packaging 3 - 31 - B4B | | |
| | | | Packaging 3 - 32 - B4B | | |
| | | | Packaging 3 - 33 - B4B | | |
| | | | Packaging 3 - 34 - B4B | | |
| | | | Packaging 3 - 35 - B4B | | |
| | | | Packaging 3 - 36 - B4B | | |
| | | | Packaging 3 - 37 - B4B | | |
| 160 QC 21 - SA | 8 pcs | 3/27/20 | 0.00 0.00 | QC 21 - SA - 21 | DAS |
| | | | | QC 21 - SA - 70 | 21 |
| | | | | QC 21 - SA - 53 | 9-89 |

MAR 10 2020

Part Op 100 - 1- Cut material to 34" 2- Bend as per D5805-3 dwg 3- Drill holes with DT10652 as per D5805-3 dwg 4- Remove Descriptions: markings on tube 5- Deburr

110 - QC5- Inspect part completeness to step on W/O

120 - 1-Machine slot as per DWG. 2-Deburr

130 - QC2- Inspect parts off machine FAI/FAIB

140 - QC8- Inspect parts - second check

150 - Identify as per dwg & Stock Location: _____

160 - QC21- Final Inspection - Work Order Release

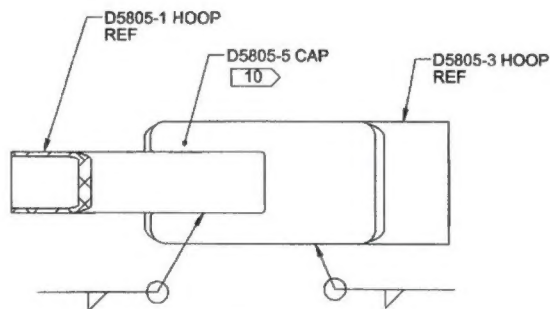
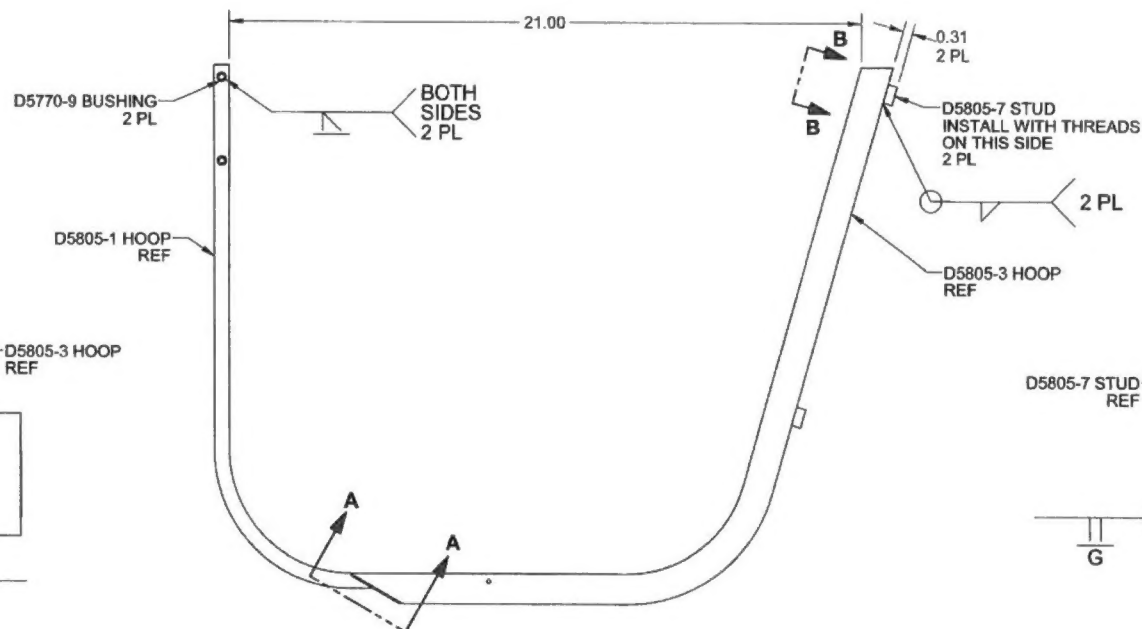
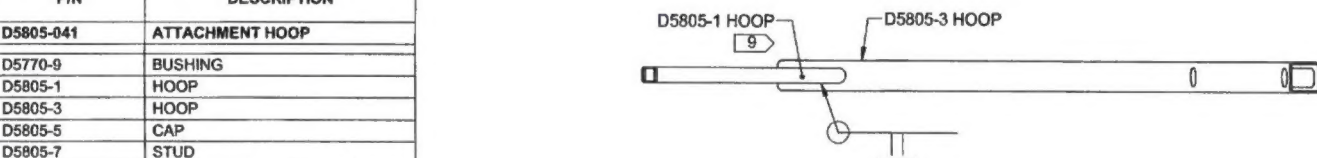
Job BOM

| Part / Item | Component Name | Quantity | Operation | Container |
|---|----------------|------------------------|-------------------------------|-----------|
| M4130NTS1.000W.065 4130 Square Tube 1.000" X 1.000" X 0.065"W | | 22.7328 ft (2.8416 ea) | 100-Large Fab - Welded Assy-1 | 5250775 |

| Job Allocations | | | | |
|------------------------------------|--------------------|----------|-----------|-----------|
| Operation | Component Part | Required | Inventory | Allocated |
| 100-Large Fab - Welded Assy-1 | M4130NTS1.000W.065 | 23 | 164 | 0 |
| Part Specifications | | | | |
| Specifications could not be found. | | | | |

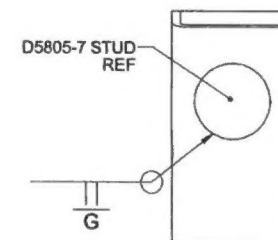
Plex 3/5/20 8:30 AM Dart.Renwick.Jennifer

| QTY -041 | P/N | DESCRIPTION |
|-------------|-----------|-----------------|
| X | D5805-041 | ATTACHMENT HOOP |
| 2 | D5770-9 | BUSHING |
| 1 | D5805-1 | HOOP |
| 1 | D5805-3 | HOOP |
| 1 | D5805-5 | CAP |
| 2 | D5805-7 | STUD |



SECTION A-A
SCALE 4X

D5805-041 ATTACHMENT HOOP
(DERIVED FROM AERO DESIGN P/N 76423-01)



VIEW B-B
SCALE 4X, 2 PL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 207481

RELEASED
2020 FEB 18
ECN 2020-521

UNDER REVIEW
URF 2020-522 20.02.14 (NO)

- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010
 - 6) IDENTIFICATION: IDENTIFY PER DART QSI 044
 - 7) WEIGHT: 2.42 lbs
 - 8) WELD PER DART QSI 004. GRIND WELDS FLUSH IF REQUIRED.
 - 9) GRIND END OF D5805-1 HOOP TO FIT SLOT OF D5805-3 HOOP
 - 10) GRIND SLOT OF D5805-5 CAP TO FIT D5805-1 HOOP

| REV. | NEW ISSUE | DESCRIPTION | ZF | 20.01.13 |
|------------|-----------|-------------|----|----------|
| DESIGN | ZF | | | |
| DRAWN | ZF | | | |
| CHECKED | KPT | | | |
| MFG. APPR. | DD | | | |
| APPROVED | NO | | | |
| DE APPR. | CP | | | |
| DATE | 20.01.13 | | | |

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HAWKESBURY, ONTARIO, CANADA

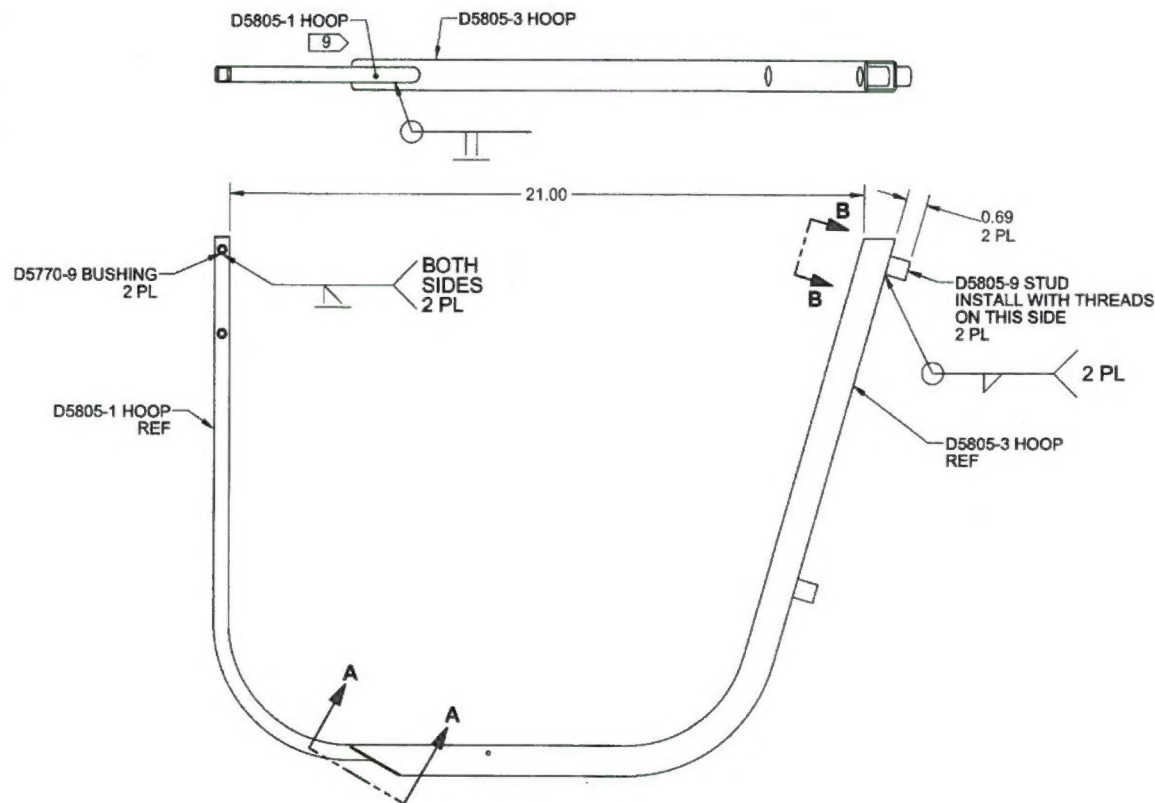
DRAWING NO.
D5805

TITLE
ATTACHMENT HOOP

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REV. A
SHEET 1 OF 6
SCALE
NTS

| QTY -043 | P/N | DESCRIPTION |
|-------------|-----------|-----------------|
| X | D5805-043 | ATTACHMENT HOOP |
| 2 | D5770-9 | BUSHING |
| 1 | D5805-1 | HOOP |
| 1 | D5805-3 | HOOP |
| 1 | D5805-5 | CAP |
| 2 | D5805-9 | STUD |



D5805-043 ATTACHMENT HOOP
(DERIVED FROM AERO DESIGN P/N 76423-07)

UNDER REVIEW

URF 2020-522 20.02.14 (NO)

NOTES:

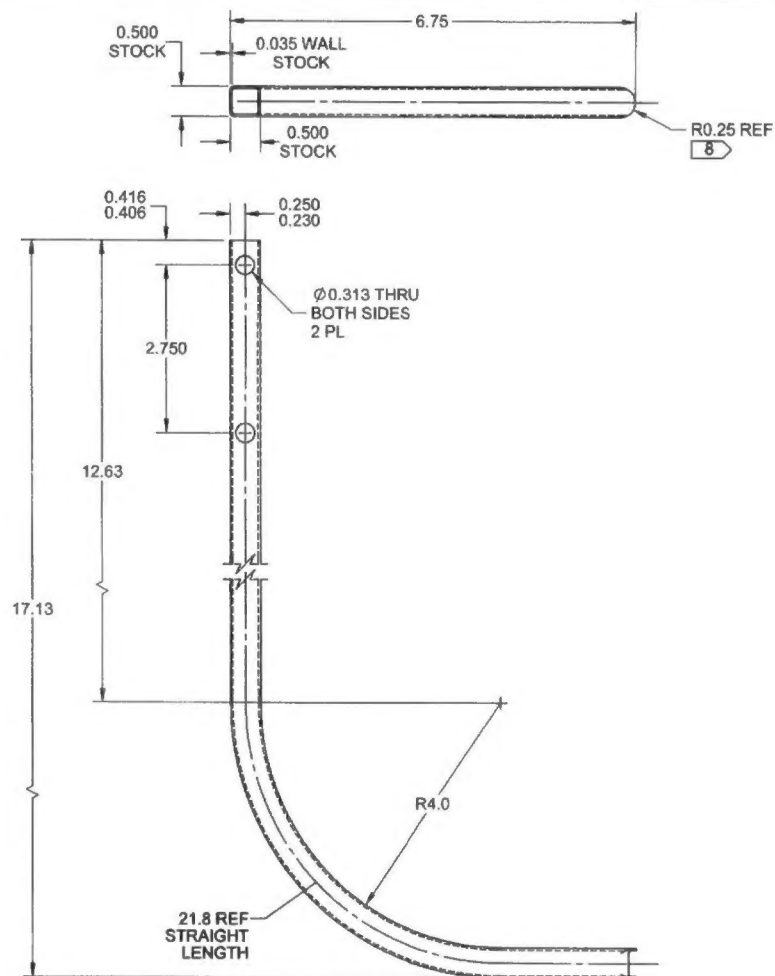
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- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010
- 6) IDENTIFICATION: IDENTIFY PER DART QSI 044
- 7) WEIGHT: 2.49 lbs
- 8) WELD PER DART QSI 004. GRIND WELDS FLUSH IF REQUIRED.
- 9) GRIND END OF D5805-1 HOOP TO FIT SLOT OF D5805-3 HOOP
- 10) GRIND SLOT OF D5805-5 CAP TO FIT D5805-1 HOOP

RELEASED

2020 FEB 18 *NO*

APPROVED

| | | |
|------------|--------------|---|
| DESIGN | ZF | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D5805 TITLE ATTACHMENT HOOP COPYRIGHT © 2020 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR DISSEMINATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> |
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| CHECKED | KPT | |
| MFG. APPR. | DD | |
| APPROVED | NO | |
| DE APPR. | CP <i>CP</i> | |
| DATE | 20.01.13 | REV. A SHEET 2 OF 6 SCALE NTS |



D5805-1 HOOP

NOTES:

- 1) MATERIAL: AISI 4130N STEEL SQUARE TUBING, 1/2 X 0.035 WALL
PER MIL-T-6736 OR AMS 6371/6360/6361/6362/6373/6374
REF DART SPEC M4130N-TS0.500W.035
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.37 lbs
- 8) GRIND END TO FIT SLOT OF D5805-3 HOOP AT ASSEMBLY

RELEASED
2020 FEB 18 *ND*

APPROVED

DESIGN ZF
DRAWN ZF
CHECKED KPT
MFG. APPR. DD
APPROVED NO
DE APPR. CP
DATE 20.01.13

UNDER REVIEW
URF 2020-522 20.02.14 (NO)

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DRAWING NO. D5805
TITLE ATTACHMENT HOOP
REV. A
SHEET 3 OF 8
SCALE NTS

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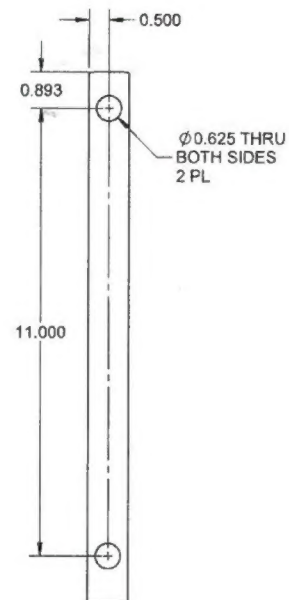
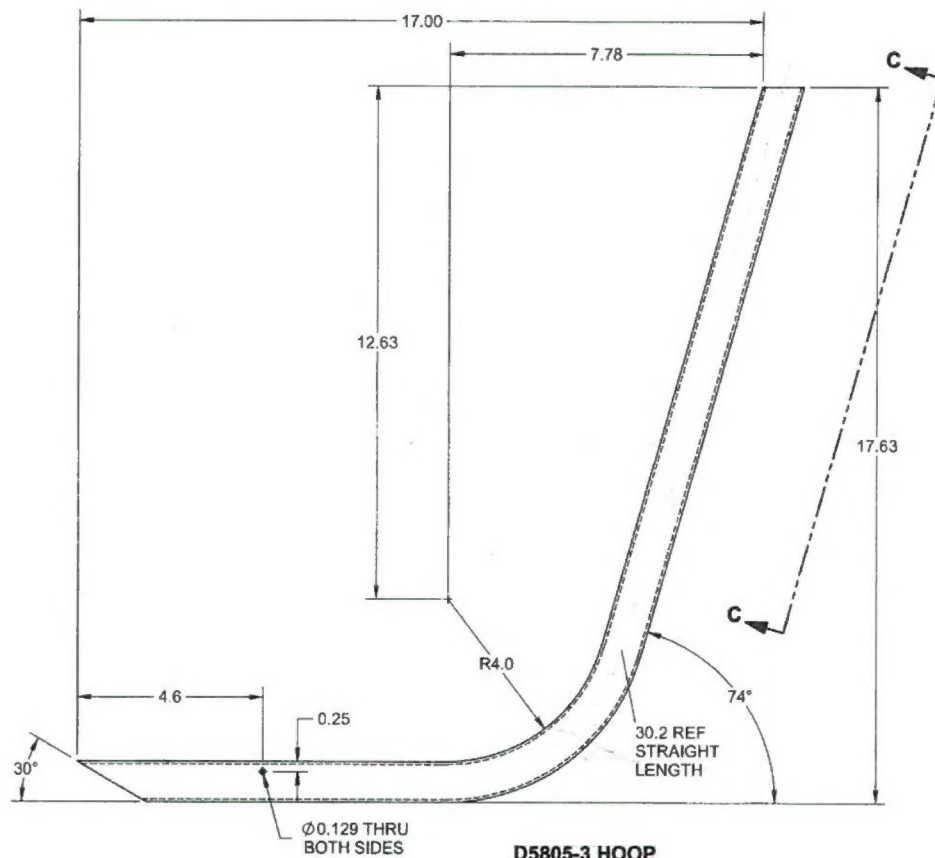
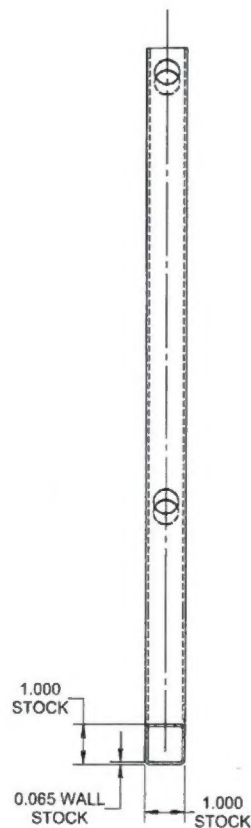
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1



VIEW C-C

D5805-3 HOOP

UNDER REVIEW

URF 2020-522 20.02.14 (NO)

NOTES:

- 1) MATERIAL: AISI 4130N STEEL SQUARE TUBING, 1 X 0.065 WALL
PER MIL-T-6736 OR AMS 6371/6360/6361/6362/6373/6374
REF DART SPEC M4130N-TS1.000W.065
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.84 lbs
- 8) GRIND SLOT TO FIT D5805-1 HOOP AT ASSEMBLY.

RELEASED

2020 FEB 18 NO

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DESIGN ZF
 DRAWN ZF
 CHECKED KPT
 MFG. APPR. DD
 APPROVED NO
 DE APPR. CP
 DATE 20.01.13

DART AEROSPACE LTD
 HAWKESBURY, ONTARIO, CANADA

DRAWING NO.

D5805

TITLE

ATTACHMENT HOOP

REV. A

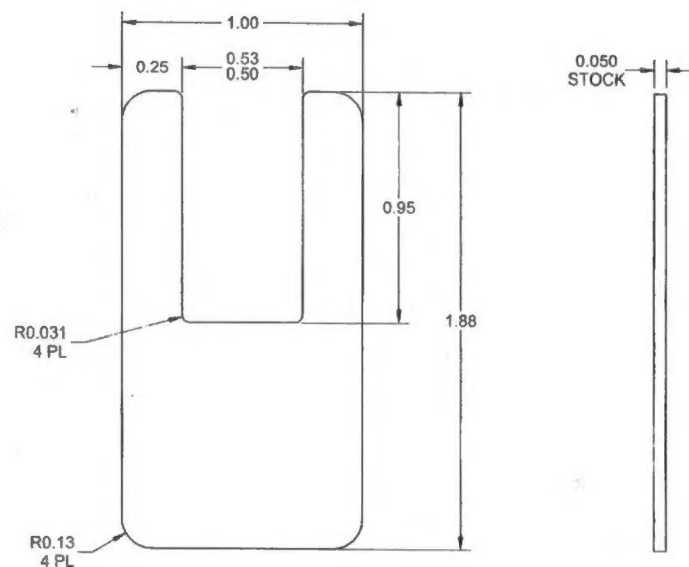
SHEET 4 OF 6

SCALE

NTS

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D5805-5 CAP
(DERIVED FROM AERO DESIGN P/N 76423-04)

UNDER REVIEW
URF 2020-522 20.02.14 (NO)

NOTES:

- 1) MATERIAL: AISI 1010/1025 STEEL SHEET, COLD ROLLED, #18 GA (0.050 THICK)
PER ASTM A36/A366/A1008 OR CSA G40-21 38W/44W/50W/60W/70W
REF DART SPEC M1010-S18GA
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.02 lbs

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2020 FEB 18 *ND*

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DESIGN ZF
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APPROVED NO
DE APPR. CP
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HAWKESBURY, ONTARIO, CANADA

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D5805

TITLE
ATTACHMENT HOOP

REV. A
SHEET 5 OF 6
SCALE
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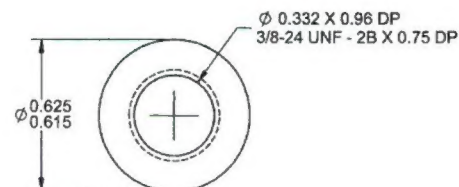
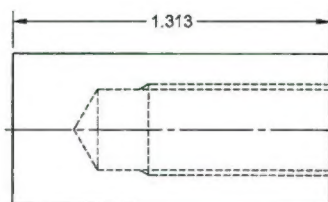
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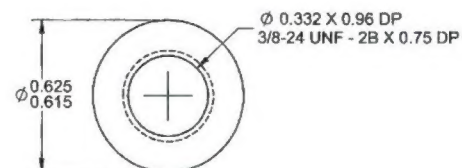
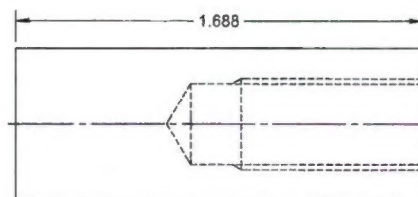
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D5805-7 STUD
(DERIVED FROM AERO DESIGN P/N 76423-05)



D5805-9 STUD
(DERIVED FROM AERO DESIGN P/N 76423-06)

UNDER REVIEW

URF 2020-522 20.02.14 (NO)

NOTES:

- 1) MATERIAL: AISI 1018/1025 STEEL ROUND BAR
PER MIL-S-7097 OR ASTM A108
REF DART SPEC M1018-R
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: -7: 0.09 lbs
-9: 0.12 lbs

RELEASED

2020 FEB 18 NO

APPROVED

| | | | |
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| DRAWN | ZF | HAWKESBURY, ONTARIO, CANADA | |
| CHECKED | KPT | DRAWING NO. | REV. A |
| MFG. APPR. | DD | D5805 | SHEET 6 OF 8 |
| APPROVED | NO | TITLE | SCALE |
| DE APPR. | CP | ATTACHMENT HOOP | NTS |
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Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER POHB045594



Supplier: FAC001-VU
Factory Steel
14020 Oakland Ave.
Detroit, MI 48203 USA
Phone: 313 883 6300
Fax: 313 883 4883

PO No: POHB045594

PO Date: 1/16/20

Due Date: 2/4/20

**Purchase Order
Revision:**

JAN 16 2020

Revision Date:

Ship-To Contact: Phone:

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

Items

| Line Item | Job | Part | Drawing | Supplier Part No | Description | Status | Account | Due Date | Order Quantity | Received Quantity | Balance | Unit Price (USD) | Extended Price |
|-----------|-----|--------------------|---------|------------------|--|----------|---------|----------|----------------|-------------------|---------|------------------|----------------|
| 1 | | M4130NTS0.750W.035 | | | 4130 Square Tube 0.750 X 0.035W : MATERIAL: AISI 4130N STEEL SQUARE TUBING PER ONE OF THE FOLLOWING SPEC'S: MIL-T-6736, AMS 6371, 6390, 6361, 6362, 6373 OR 6374 | Firmed - | | 2/4/20 | 600 ft | 0 ft | 600 ft | \$7.25/ft | \$4,350.00 |
| | | | | | | | | | 609 ft | | | | |
| 2 | | M4130NTS1.000W.065 | | | 4130 Square Tube 1.000" X 1.000" X 0.065"W : MATERIAL: AISI 4130N STEEL SQUARE TUBING PER ONE OF THE FOLLOWING SPEC'S: MIL-T-6736, AMS 6371, 6390, 6361, 6362, 6373 OR 6374 | Firmed - | | 2/4/20 | 160 ft | 0 ft | 160 ft | \$11.70/ft | \$1,872.00 |
| | | | | | | | | | 171 ft | | | | |

Grand Total: \$6,222.00

PACKING LIST

No. 67371

PG 1 OF 1

PL

| | | | | | | | |
|---|--|---|--|--|--|---------------------------|--|
| FACTORY STEEL & METAL SUPPLY 14020 OAKLAND AVENUE DETROIT, MI 48203 | | CUSTOMER PO POHB045594 | | BUYER CHANTEL LAVOIE | | SHIP DATE 01/21/2020 | |
| (313)883-6300 PHONE (313)883-4883 FAX | | CUSTOMER JOB | | Tel (613) 632-3336 Fax (613) 632-4443 | | SHIP VIA ****TRUCK**** | |
| | | SALES ORDER 60306 | | ORDER DATE 01/16/2020 | | RESALE # 59-2958719 | |
| SOLD TO DART AEROSPACE 1270 ABERDEEN STREET HAWKESBURY, ON K6A 1K7 | | SHIP TO DART AEROSPACE 1270 ABERDEEN STREET HAWKESBURY, ON K6A 1K7 | | SHIP INST CALL WHEN READY | | CARRIER TRUCK | |
| | | | | PRO# | | BLIND Y/N N | |
| | | | | TERMS NET 30 DAYS | | FOB DETROIT | |

| LINE | QUANTITY | DESCRIPTION | WIDTH | LENGTH | WEIGHT | | |
|------|------------|--|-----------------|--------------|---------|--|--|
| 1 | 609.917 FT | 4130N CD SMLSS SQ TUBE 3/4" X .035W | | 20' / 24' RL | 207.554 | | |
| | | Tag Mill Ref # Heat | Pcs Length | Feet | Weight | | |
| | | 153513 023679 616506 | 26 20' / 24' RL | 609.917 | 207.554 | | |
| 2 | 171.333 FT | 4130N CD SMLSS SQ TUBE 1" X .065W | | 22' / 23' RL | 141.606 | | |
| | | Tag Mill Ref # Heat | Pcs Length | Feet | Weight | | |
| | | 153514 072143 072067859 | 7 22' / 23' RL | 171.333 | 141.606 | | |
| 3 | 1 PCS | PACKING CHARGES | | | | | |
| | | MTRS (CIRCLE) FAX SHIPMENT INVOICE ALL | | | | | |
| | | DATE: _____ INITIAL: _____ | | | | | |

TOTAL WT
349 LBS

RECEIVED BY - SIGNATURE

RECEIVED BY - PRINTED NAME

DATE RECEIVED

LIME 2
M4130NTS 1.000W.065

5250795
072067859



| | | | |
|------------------|----------------|---|------------------------|
| DESIGN PH | DRAWN BY PH | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| CHECKED PH | APPROVED PH | DRAWING NO. M4130N-TS | REV. A SHEET 1 OF 1 |
| DATE 05.02.09 | | TITLE 4130N SQUARE TUBING | SCALE NTS |
| A | 05.02.09 | NEW ISSUE | |

PURCHASE MATERIAL:

AISI4130N STEEL SQUARE TUBING PER ONE OF
THE FOLLOWING SPEC'S: MIL-T-6736, AMS 6371,
6360, 6361, 6362, 6373 OR 6374

PART NUMBER:

M4130N-TS | A.AAA | W | .TTT |

DAS
82
9-89

WHERE A.AAA = WIDTH IN INCHES
TTT = WALL THICKNESS IN INCHES

EXAMPLE: 0.50" X 0.035" WALL = M4130N-TS0.500W.035

RELEASED
05.03.15

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TEST REPORT

2

| | | | | | | | | | | | | |
|--|-----------------------|------------------------|-----|----------------------------|--|--------------|--------|----------------|----|----|-----|------|
| 5753 | | MICHIGAN SEAMLESS TUBE | | SOUTH LYON, MICHIGAN 48178 | | SHIPMENT 001 | | | | | | |
| ORDER NUMBER | CUSTOMER ORDER NUMBER | DATE | OPC | COM | DIWI | NET SLS | GR SLS | ACCOUNT NUMBER | US | BN | 2ME | PAGE |
| 072143 | 2962 | 04/14/16 | 22 | 00 | 16 | 16 | 01 | 02598001PCO | | | | 1 |
| SOLD TO: FACTORY STEEL & METAL SUPPLY 14020 OAKLAND DETROIT MI USA 48203 | | | | | SHIP TO: FACTORY STEEL & METAL SUPPLY 14020 OAKLAND AVENUE DETROIT MI 48203 SN TR INV | | | | | | | |

ROUTING

OPEN TOP/FULLY TARPED/FOB SOUTH LYON MI

PPD TRUCK

| ANALYSIS | SHAPE | PRODUCT | FC | ANNEAL | REQUESTED |
|----------|---------------|------------|-------------------|-----------------|-----------|
| 4130 | SQUARE | COLD DRAWN | | STRESS RELIEVED | 05/13/16 |
| SEAMLESS | SPECIFICATION | CMST | DESCRIPTION | PROMISE | |
| | AMS-6371/A519 | | CD ALLOY AIRCRAFT | 05/13/16 | |

SPECIAL INSTRUCTIONS
OIL (SQUARE) DFM COMPLIANT. 1-HEAT MAX. MARK & CERT TO A519-96,
MILT-6736BN NOTE-2, AMS-6360M, AMS-6371K, AMS-T-6736AN, 4130H &
AMS-2301K. DECARB LEVELS TO AMS-6371. 80 KSI MIN YLD-AIM 90 KSI.
T/R TO INCL CHEM & PHYS. MAGNETIC PARTICLE TESTING NOT
GUARANTEED. PAINT ENDS-RED. AIM LONGEST LENGTH.

DAS
8
9-89

| ITEM | QUANTITY | O.D. | I.D. | WALL | LENGTH | WT/FT | WEIGHT | |
|------|----------|-------|------|-------------|--------|-------|--------|----------------------|
| | | 1.000 | | .065 AVG | | .8265 | | 09:01:48 05/16/16 |

| | | |
|-----|------|----------|
| ITM | BALE | --BALE-- |
| NUM | NUM | PCS FTG |
| 1 | 1 2 | 120 2940 |
| 1 | 2 2 | 104 2550 |
| 1 | 3 2 | 16 388 |

HEAT NO.
072067859
072067859
072067859

LENGTH
RAND 20'-26'
RAND 20'-26'
RAND 20'-26'

ITM PART
STATUS NUMBER
COM
COM
COM

| HEAT NO. | C | Mn | P | S | Si | Ni | Cr | Mo | Cu | Al | REMARKS |
|-----------|------|------|------|------|------|------|-------|------|------|------|-----------|
| 072067859 | .310 | .480 | .012 | .017 | .230 | .200 | 1.070 | .170 | .210 | .019 | EF GERDAU |

| HEAT NO. | ULT. STRL PSI | YIELD, PSI | % ELONG | HARDNESS | HYDRO TEST PSI | ULTRA SONIC % | EDDY CURRENT | EXPANSION |
|-----------|---------------|------------|---------|-------------|----------------|---------------|--------------|--------------|
| 072067859 | 113,623 | 100,318 | 20.8 | HBW 226-248 | | | OK | |
| 072067859 | 113,199 | 100,381 | 22.0 | HBW 226-248 | | | | |
| 072067859 | 116,653 | 101,631 | 22.5 | HBW 226-248 | BEND | FLATTEN | FLARE | REV. FLATTEN |
| 072067859 | 112,167 | 98,875 | 22.0 | HBW 226-248 | | | | FLANGE |

DECARB OK GRAIN SIZE 8
FREQ 0.00 SEV 0.00
MACROS: S1 R1 C1
J1 J2 J3 J4 J5 J6 J7 J8 J9 J10
51 51 50 49 47 43 37 36 34 31
MELTED & MANUFACTURED USA

Manager - Quality Assurance

We hereby certify that the reported data are correct according to Michigan Seamless Tube tests and those of its suppliers.

8.2.PS.F0 Rev

LINE 2

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130NTS 1.000W, 065 PO / BATCH NO.: P0113045594
 DATE: JAN 27 2020 5250795

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 171 PT
 QUANTITY INSPECTED: 171 PT
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.000W, 065
 THICKNESS RECEIVED: 1.000W, 065
 SHEET SIZE ORDERED: —
 SHEET SIZE RECEIVED: —

| DESCRIPTION | NCR (Check Y/N) | COMMENTS |
|--|---|------------|
| SURFACE DAMAGE | Y <input checked="" type="checkbox"/> N | |
| CORRECT FINISH | <input checked="" type="checkbox"/> Y N | |
| CORROSION | Y <input checked="" type="checkbox"/> N | |
| CORRECT GRAIN DIRECTION | <input checked="" type="checkbox"/> Y N | |
| CORRECT MATERIAL PER M-DRAWING | <input checked="" type="checkbox"/> Y N | MIL-T-6736 |
| CORRECT THICKNESS | <input checked="" type="checkbox"/> Y N | |
| PHOTO REQUIRED | Y <input checked="" type="checkbox"/> N | |
| CORRECT REF # TO LINK CERT | <input checked="" type="checkbox"/> Y N | 072067859 |
| CORRECT MATERIAL IDENTIFICATION | <input checked="" type="checkbox"/> Y N | |
| CORRECT M# ON THE MATERIAL | <input checked="" type="checkbox"/> Y N | |
| DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF | Y <input checked="" type="checkbox"/> N | |
| DOES THIS REQUIRE AN EXTRUSION REPORT | Y <input checked="" type="checkbox"/> N | |

| CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW | | | | | |
|--|-----|-----|-------|-------|---------|
| | HRC | HRB | DUR A | DUR D | WEBSTER |
| TYPE OF MATERIAL | | | | | |
| SIZE OF TEST SAMPLE | | | | | |
| HARDNESS / DUROMETER READING | | | | | |

testers located in the Quality Office

| | | | |
|---------------------|------------------|-----------------------------------|--|
| QC 18 INSPECTION | | ENGINEERING SIGNOFF (if required) | |
| INSPECTED BY: _____ | DAS 82 | SIGNED OFF BY: _____ | |
| DATE: JAN 27 2020 | 9-89 | DATE: _____ | |

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

| | | | | | |
|--|---|---|--|------------------------|--|
| Job: _____ Part No. _____ | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> | DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Cross tube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> </div> <div> Eng. (Non-AW) <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Water Jet <input type="checkbox"/> Supplier <input type="checkbox"/> Quality <input type="checkbox"/> </div> </div> | | | |
| Date : | Sequence #: | QTY Affected : | | MRB (QSI042) | |
| Description Work Order Deviation | | Disposition | | Completed By | |
| | | | | Lead hand / Supervisor | |
| | | | | | |
| | | | | QC / QA Coordinator | |
| Root Cause <div style="display: flex;"> <div style="flex: 1;"> Operator <input type="checkbox"/> Manufacturing Process <input type="checkbox"/> Equip/Tooling <input type="checkbox"/> Handling/Preservation <input type="checkbox"/> Material <input type="checkbox"/> Product Improvement <input type="checkbox"/> Process Improvement <input type="checkbox"/> Human Factors <input type="checkbox"/> </div> <div style="flex: 1;"> <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Bending <input type="checkbox"/> Crushing <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Mislabeled </div> </div> | | FAULT CATEGORY <div style="display: flex;"> <div style="flex: 1;"> <input type="checkbox"/> Contamination <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Incomplete/Unclear Instructions <input type="checkbox"/> Drill Holes <input type="checkbox"/> Fit/Function </div> <div style="flex: 1;"> <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain Direction <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Off-set/Set-up </div> <div style="flex: 1;"> <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Outside Tolerance <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Misread </div> </div> | | | |
| Other/Details: | | | | | |